

USSR

UDC 615.213

AKOPYAN, N. Ye., and GERASIMYAN, D. A.

"Anticonvulsive Properties of N-Methyl- $\alpha$ -Substituted Succinimides"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 10, 1971, pp 88-90

Translation: We have shown earlier that  $\alpha$ -substituted succinimides possess a definite anticonvulsive action with respect to convulsions caused by corazol and electric shock. It is known from literature that the anticorazol action of barbiturates and hydantoins increases when nitrogen is methylated at the third position. An identical effect was produced by alkylation and especially by methylation of imide nitrogen in the case of succinimide derivatives.

In this work we studied the anticonvulsive properties of 11 N-methyl- $\alpha$ -substituted succinimides which were synthesized at the ITOKh [Institute of Fine Organic Chemistry] of the Academy of Sciences Armenian SSR.

Experiments were carried out with white mice. Convulsions were produced by corazol, electric shock (maximal), nicotine, and arecoline. All compounds were administered intraperitoneally as colloidal suspensions (because of their insolubility in water) 45 min before the administration of convulsants.

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USSR

GAMBURYAN, A. A., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

The compounds synthesized together with their physical properties and the melting points of hydrochlorides or iodomethylates are listed in tables.

2/2

USSR

UDC 541.69+542.91+547.631.4

GAMBURYAN, A. A., BABIYAN, N. A., MOROZOVA, N. M., AKOPYAN, N. YE., CHAUSHYAN, K. M., and MNDZHOYAN, L. O., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Studies in the Field of Aminoethers. V. Dialkylaminoalkyl Ethers of Benzhydryl and o-, m-, and p-Benzhydrols - their Synthesis and Neuropharmacological Activity"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

Abstract: By the rearrangement of quaternary salts formed by aminoalcohols with benzhydryl chlorides, the aminoethers  $RC_6H_4-CH(Ph)-OC_nH_{2n}.NR'_2$  were prepared, where R = H or o-, m-, p-Me; R' = Me, Et;  $C_nH_{2n} = (CH_2)_2, (CH_2)_3, (CH_2)_4, CH(Me)CH_2CH_2, CH(Me)CH(Me), CH_2C(Me)_2CH_2$ . Physiological tests carried out with the aminoethers upon their conversion to hydrochlorides showed that transition from beta-dialkylaminoethyl ethers to propyl ethers increased the antispasmodic activity. This activity again decreased on transition to dialkylaminobutyl ethers. Some of the compounds that has been prepared exhibited an antihistaminic activity in tests on the isolated intestine of guinea pigs.

1/2

USSR

AKOPYAN, N. S.

"Change in Blood Protein Composition of Acclimatized Animals After X-Irradiation"

Uch. zap. Yerevan. un-t. Yestestv. n. (Scientific Notes of Yerevan University: Natural Sciences), 1970, No 2 (114), pp 50-55 (Armenian summary) (from *Biologicheskaya Khimiya*, No 2, 25 Jan 71, Abstract No 271377 from summary)

Translation: The albumin/globulin ratio of rabbits acclimatized at an altitude of 3200 m increased in comparison with control animals. In the early postnatal period of development the blood albumin content was higher than the globulin fraction content. The compensatory hyperglobulinemia reaction to irradiation-induced (700 roentgens) hypocalcaemia was slightly diminished in acclimated rabbits.

1/1

USSR

UDC 576.851.2

POSTOYAN, S. T., and GRIGORYAN, C. M., Yerevan Medical Institute, and Institute of Epidemiology and Hygiene imeni N. B. Akopyan

"Properties of Bacteriocins of Pathogenic and Nonpathogenic Staphylococci"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 7, 1976, pp 107-108

Abstract: A study of 46 pathogenic and 22 nonpathogenic staphylococci-producing strains showed that they differ from one another in various physicochemical properties. For example, 32 of the 68 were able to penetrate a cellophane membrane; 28 cultures remained stable for 3 to 5 days and 40 for only 1 or 2 days. Staphylococcus cultures were more sensitive to nonpathogenic staphylococin-producing strains. Six types of staphylocins were established on the basis of comparable characteristics. It is suggested that staphylocin typing may be used for epidemiological purposes.

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0140291  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MASS SPECTROMETER EMPLOYING  
MONOCHROMATIC LIGHT FLUX OF ENERGY UP TO 14 EV WAS USED TO STUDY  
PHOTOIONIZATION OF ETI, ETBR, AND ETCL VAPORS. ANAL. OF  
PHOTOIONIZATION EFFICIENCY CURVES DISCLOSED BOTH THE IONIZATION  
POTENTIALS OF THE STUDIED MOLES. AND THE EXCITATION ENERGIES OF THE  
FORMED IONS. PREDISSOCN. TAKES PLACE IN THE REGION BETWEEN THE FIRST  
TWO IONIZATION POTENTIALS AND AT 11-12 EV. THE APPEARANCE POTENTIALS  
OF METASTABLE IONS AND THE MECHANISMS OF THEIR FORMATION ARE GIVEN.  
FACILITY: NAUCH.-ISSLED, FIZ. INST., LENINGRAD. GOS. UNIV. IM.  
ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PHOTOIONIZATION OF ETHYL HALIDE VAPORS -U-  
AUTHOR-(03)-AKOPYAN, M.YE., SERGEYEV, YU.L., VILESOV, F.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 213-19  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHOTOIONIZATION, CHLORINATED ALIPHATIC COMPOUND, BROMINATED  
ORGANIC COMPOUND, IODINATED ORGANIC COMPOUND, HALIDE, ALKYL RADICAL  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605012/D05 STEP NO--UR/0456/70/004/003/0213/0219  
CIRC ACCESSION NO--AP0140291  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127469

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GASOLINE LIGROINE FRACTION, D.  
IS SMALLER THAN OR EQUAL TO 220DEGREES, WAS PROCESSED. AS THE TEMP.  
INCREASED FROM 480 TO 500DEGREES, THE YIELD OF H-CH SUB4 FRACTION  
INCREASED AND THAT OF UNSATD. HYDROCARBONS DECREASED FROM 47.8 TO 44.9  
WT. PERCENT. THE MAX. GAS YIELD OF 72.0 WT. PERCENT BASED ON RAW  
MATERIAL WAS OBTAINED AT 0.5 HR PRIME NEGATIVE1 AND 560DEGREES WHEN  
3.2PERCENT COKE WAS DEPOSITED ON THE CATALYST, BUT THE OPTIMUM GAS AND  
UNSATD. HYDROCARBON YIELD WAS OBTAINED AT 0.7 HR PRIME NEGATIVE1. THE  
HIGHER YIELD OF 87PERCENT CATALYZATE WAS OBTAINED AT 0.7 HR PRIME  
NEGATIVE1 AND 480DEGREES. THE LIQ. CATALYZATE WAS USED FOR HIGH OCTANE  
GASOLINE. CHARACTERISTICS OF THE RAW MATERIAL AND RESULTS ARE  
TABULATED. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA.  
BAKU, USSR.

UNCLASSIFIED



1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CRACKING OF A WIDE FRACTION OF SIAZAN PETROLEUMS OVER AN ALUMINA  
CHROMIA CATALYST -U-  
AUTHOR--(05)-GUSEINOV, D.A., GAMIDZADE, G.A., ABASOVA, N.A., GADZHIEV,  
G.G., AKOPYAN, M.P.  
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(3), 47-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--GASOLINE, CATALYTIC CRACKING, ALUMINA, CHROMIUM, METHANE,  
HYDROGEN, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/2096

STEP NO--UR/0152/70/013/003/0047/0049

CIRC ACCESSION NO--AP0127469  
UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 575.24

PARONIKYAN, G. M., AKOPYAN, L. G., and OGANESYAN, M. G., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR, Yerevan

"Mutagenic Effect of Some New Chemical Compounds. I. Study of the Mutagenic Effect of Nitrogen Mustards on Escherichia coli P-878"

Moscow, Genetika, No 4, 1971, pp 113-117

Abstract: Study of the mutagenic effect of 22 new nitrogen mustards, 2-(4)-alkoxy-5-bromo(chloro)-benzyl-bis-( $\beta$ -chloroethyl)amines and bis-( $\beta$ -chloroethyl)amides of 2-alkoxy-5-bromobenzoic acid, showed a distinct relationship between their mutagenic activity and chemical structure. Even minor changes, e.g., lengthening of the alkoxy radical from propyl to amyl, markedly affected the mutagenic activity of the compounds. The most active were substances with methyl and ethyl radicals. Five of the compounds proved to be more active than nitrogen mustard; the most potent was 2-ethoxy-5-bromobenzyl-bis-( $\beta$ -chloroethyl)amine. Their derivatives induced over 200<sub>0</sub> revertants compared with the control.

2/2 C12

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APC112734

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESIGN EQUATIONS ARE DEVELOPED FOR  
COMPUTER CALCN. OF OPTIMUM HOLLOW (TUBE TYPE) SOLID, GAS REACTORS. THE  
EQUATIONS YIELD EITHER RESIDENCE TIMES OF THE DESCENDING SOLIDS,  
OPERATING PARAMETERS, OR REACTOR SIZE.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--DETERMINATION OF THE RESIDENCE TIME OF PARTICLES IN HOLLOW REACTION  
VESSELS -U-  
AUTHOR--(03)-NIKLAYENKO, V.P., BUDKOV, V.V., AKOPYAN, L.A.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. UKR. 1970, (1), 24-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DESIGN STANDARD, COMPUTER AIDED DESIGN, ALGEBRAIC EQUATION,  
PARTICLE PHYSICS, PARTICLE MOTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1748 STEP NO--UR/0436/70/000/001/0024/0026  
CIRC ACCESSION NO--AP0112734  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WETTING OF BUTADIENE  
ACRYLONITRILE RUBBER SKN-18 IS DEPENDENT ON THE DEGREE OF STRETCHING.  
THE SURFACE TENSION OF SKN-18 VARIES LINEARLY WITH THE DEGREE OF  
STRETCHING AND VARIES WITH THE DIRECTION (IN RESPECT TO THE ELONGATION)  
IN WHICH IT IS MEASURED. FACILITY: FILIAL NAUCH.-ISSLED. INST.  
REZIN. PROM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ANISOTROPY OF THE SURFACE TENSION OF A DEFORMED RUBBERLIKE POLYMER  
-U-  
AUTHOR--(02)-BARTENEV, G.M., AKOPYAN, L.A. A  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 395-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--SURFACE TENSION, ANISOTROPY, BUTADIENE RUBBER, NITRILE  
RUBBER/(U)SKN18 BUTADIENE RUBBER, (U)SKN18 ACRYLONITRILE RUBBER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1227 STEP NO--UR/0460/70/0127/05/0345/0397  
CIRC ACCESSION NO--AP0134901  
UNCLASSIFIED

AKOPYAN, A. I.

JPRS 56729

17 April 1972

REPEITIVE RATE OF RANGING SIGNALS OF DOLPHINS AS A FUNCTION  
OF DISTANCE TO TARGET

[Article by V. P. Morozov, A. I. Akopyan, V. L. Burdin, E. A. Gantsova and Yu. A. Sekovych, Institute of Evolutionary Physiology and Biochemistry Acad. I. M. Sechenov, USSR Academy of Sciences, Leningrad; Moscow, *Nestlika*, Russian, Vol 17, No 1, 1972, submitted 24 September 1970, pp 139-147]

**Abstract:** This paper gives the results of an experimental study of the patterns of change in the repetition rate of ranging signals of a dolphin in the process of active ranging to a target (fish). It was established that the repetition rate of ranging signals during movement of the animal toward the fish varies within a certain range, at the same time retaining high values  $10 = 24/c$ , where  $L$  is the distance from the dolphin to the target,  $c$  is the speed of propagation of sound in the water. The collected data make it possible to assume that the dolphin emits each successive ranging pulse only some time (averaging 20 msec) after the echo from the preceding pulse is received.

The ever-increasing interest in the study of dolphins is attributable to a high degree to their possession of a highly developed echo-ranging apparatus. This enables them even in the absolute darkness and with inoperative vision to detect and discriminate extremely reliably and precisely different types of food and other objects and to differentiate precisely not only the size and shape of objects, but their structure (material) as well [1-8]. It is natural that the biophysical principles of the operation of the echo-ranging apparatus of the dolphin are of great interest in both evolutionary-physiological and bionic respects.

2/2 009

UNCLASSIFIED

PROCESSING DATE--3000170

CIRC ACCESSION NO--AP0123650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS OF VINYL FORMATE (I) FROM ACETYLENE AND FORMIC ACID IN THE VAPOR PHASE OVER FLUIDIZED ZN AND CD CATALYSTS WAS EXAMD. IN A CONTINUOUS REACTOR (1969). THE ORDER OF CATALYST ACTIVITY WAS: CD FORMATE IS LESS THAN ZN FORMATE IS LESS THAN MIXT. 1:1 OF BOTH (IN ALL CASES ON ACTIVATED C SUPPORT). THE OPTIMUM TEMP. FOR MAX. YIELD OF I AND MIN. BY PRODUCTS (ACETALDEHYDE, VINYL ACETATE, CROTONALDEHYDE) WAS 180DEGREES, AND THE OPTIMUM RATIO II-III WAS 3.5:1. FACILITY: EREVAN. OTD. NAUCH. ISSLED. INST. POLIM. PLASTMASS, EREVAN, USSR.

UNCLASSIFIED



1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SYNTHESIS OF VINYL FORMATE IN A FLUIDIZED CATALYST BED -U-

AUTHOR--(04)--AKOPYAN, A.YE., BOYADZHYAN, V.K., YERITSYAN, V.K., OVSEPYAN,  
S.S.  
COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 193-9

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VINYL COMPOUND, FORMIC ACID, CARBOXYLIC ACID ESTER, FLUIDIZED  
BED, CATALYTIC ORGANIC SYNTHESIS, ACETYLENE, ACETATE, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1862

STEP NO--UR/0316/70/023/001/0193/0109

CIRC ACCESSION NO--AP0123650

UNCLASSIFIED

UDC:622.7:321.9.004

USSR

AKOPOVA, K. S., DOKSHINA, I. D., TYUTYUNNIK, N. D., YAKUBOVICH, I. A.,  
ZADOROZHNYI, V. G., BELOGAY, P. D., DEGTYARENKO, A. V., TISHCHENKO, A. G.

"Use of Ultrasound in Enrichment of Titanium-Zirconium Deposits"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 86-89

Abstract: A method has been developed for application of acoustical oscillations to minerals to change their surface properties before enrichment. This article presents results of an investigation of the influence of ultrasonics on the minerals in titanium-zirconium placer deposits. It has been established that 1-3 minutes action of ultrasound at 20 KHz and an intensity of  $3.8 \text{ W/cm}^2$  greatly activates the flotation of minerals by the flotation oil. The yield of minerals in the foam product increases as follows: zirconium from 18.6 to 98.9%, rutile from 3.0 to 97.5%, ilmenite from 0 to 94%, staurolite from 0 to 90%. The expenditure of collectors is also reduced and the flotation properties of minerals from different deposits are made more similar.

AKOPOVA, I. L.

50:3445 53378  
16 JAN 71

UDC: 616.893.6-056.76

## GENEALOGICAL STUDIES RELATED TO SCHIZOPHRENIA

RUSSIAN

Article by I.V. Shakhmatova-Pavlova, I.L. Akopova, L.K. Lobova, E.W. Strychenko, V.I. Shenderova, Institute of Psychiatry, USSR Academy of Medical Sciences, Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No. 5, May 1971, pp. 46-50.

Extensive investigations of recent years have confirmed the previously known fact that there is definite accumulation of pathology in the families of schizophrenics. The studies of Rosenthal, Kety, Wender, Heston, and others, based on representative material, revealed that "disorders in the schizophrenic spectrum" (Rosenthal) are encountered more often, with statistical reliability, in the blood relatives of a proband as compared to the total population. However, practice has shown that direct form of psychiatric diseases and different types of borderline states, as well as mixed personality anomalies may be detected, described, and classified only if the physician makes a complete examination of the family. Therefore, a methodical clinical description of the probands and their immediate relatives should be the basis of a genealogical study which is the first stage of genetic analysis.

The present study is based on observations made in the genetic group of the Institute of Psychiatry, USSR AMN, Academy of Medical Sciences, in 1965-1969. The genealogical method was used to study 170 families of patients with different forms (continuous, sporadic processual, and periodic) of schizophrenia.

We did not make the traditional division of probands into Kraepelin's types, since such division is based on static syndromal evolution, in which the leading syndrome at the time the patient is examined is used as the basis. This does not take into consideration the course of the disease as a whole. Studies pursued at the Institute of Psychiatry, USSR AMN, for a number of years revealed that such a basic parameter as course is the closest to the biological essence of the process.

The classification of schizophrenia according to type of course, which has been adopted at the Institute of Psychiatry, USSR AMN, is quite consistent with the division of endogenous psychoses established in psychiatry (Table 1).

USSR

UDC 616:001.18

AKOPOVA, A. L. and AKOPYAN, Zh. L., Institute of Cardiology, Ministry of Health,  
Armenian SSR

"Morphological Changes in the Viscera During Deep Hypothermia"

Yerevan, Biologicheskii Zhurnal Armenii, No 10, 1972, pp 106-107

Abstract: Histologic examination of various tissues of rats subjected to general hypothermia for up to 3 hours revealed degenerative changes in the heart, liver, and kidneys, the intensity varying with the depth and duration of exposure to cold. When the animals received injections of a 30% glycerin solution (1 ml/100 g) prior to hypothermia, the above organs remained virtually intact for a short while, and during the next 2 hours the morphological changes were less pronounced than in the animals not given glycerin.

USSR

UDC 77

AKOPOVA, A. B., MAGRADZE, N. V., MELKUMYAN, L. V.

"Effect of an Electric Field on Taking a Latent Image in Emulsion Layers"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 183-186 (from PZh-Fizika, No 12(I), Dec 70, Abstract No 12D1369)

Translation: The action of 5-6 kv field pulses of 200-300  $\mu$ sec duration with a frequency of 10 Hz on the resorption of the latent image of relativistic particles ( $\pi$ -mesons or 3 Gev electrons) and slow electrons was investigated in 400  $\mu$  layers of the nuclear emulsion NIKFI-BR-1. The resorption was very clear, especially for relativistic particles, and intensified with an increase in the total number of pulses. The effect of the field on the sensitivity of the layers was slight and could be compensated by a certain lengthening of the development. The resorption action of the field is thus sharply different for sensitivity centers and latent image centers. A. L. Kartuzhanskiy.

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USSR

AKOPOVA, A. B., et al., Izvestiya Akademii Nauk Armyanskoy SSR: Fizika, Vol 6, No 6, 1971, pp 508-511

of their length. A similar effect in the distortion of track parameters was also observed by the authors in Ya- and N-1-type emulsion layers. The most probable explanation for the physical observation could be the effect of the pulsed electric field on the gel which changes its physico-mechanical characteristics. Original article: two figures, one table, and seven bibliographic entries.

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USSR

UDC:

AKOPOVA, A. B., KARTUZHANSKIY, A. L., KASRAZDE, N. V., and MOLESTAN, L. V.

"Some Changes in the Parameters of the Paths of Particles in Nuclear Emulsions Under the Effect of a Pulsed Electric Field"

Yerevan, Izvestiya Akademii Nauk Armjanskoy SSR: Fizika, Vol 6, No 6, 1971, pp 508-511

Abstract: Using the  $Pu^{239}$  alpha-particle track regression example (5.15 Mev energy) in BR-type, 200 $\mu$  nuclear emulsion layers, the authors attempt to show and evaluate information distortion. Multiple field pulses with an intensity of  $(E) 1.5-6.0 \cdot 10^4$  v/cm (where the values of E are given with the dielectric properties of the emulsion layer considered) are fed onto the emulsion layer. Individual pulse duration is 3.5 msec at a frequency of 200 pulses/min. The results show a progressive decrease in the length of particle tracks as E increases at a constant number of pulses or as the number of pulses increases at a constant E. Significant changes in the angular distribution of tracks in the emulsion were observed under the effect of a pulsed electric field. The changes were of the type where the particles tended to orient along the field without regard to their initial direction. Bar graphs are given which show an increase in the dip angle of the tracks which is analogous to the shortening.

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USSR

AKOPOVA, A. B., et al, Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, No 6, Nov/Dec 71, pp 441-443

for which the role of diffusion exchange played an especially great role. A rise in the rate of swelling of the emulsion layer in a sonic field, aiding the expansion of intermicellar channels and contributing to the acceleration of diffusion of thiosulphate in the gelatin to the silver halogenide crystals was established experimentally. Acoustical oscillations applied to the emulsion-solution system with a frequency of 50 Hz thus considerably reduce the activation energy for diffusion of the reacting molecules, which is verified by the growth of the relative sonic effect with an increase in the magnitude of the oscillations from 0.4 to 1.5 mm. A device for such processing is pictured.



USSR

AKOPOVA, A. B., et al, Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, No. 6, Nov/Dec 71, pp 441-443

avoid bubbling of the layer and to develop an optimal regime for the photographic processing of glued layers in the sonic field at a frequency of 50 Kc and an amplitude of 1.5 mm. In developing the glued layers diffusion of the components of the solutions was obtained only from one surface of the emulsion layer. As distinct from sonic processing of glued layers which leads to a 4-fold acceleration of the development process, the duration of the working in this case was shortened on the average by only a factor of 2 as compared with the ordinary process. As expected the doubling of the acceleration of diffusion of the developing material in the layer and the reaction product from the layer into the solution contribute to the decrease in the grain background of fog and to a drop in the inhomogeneity of the development over the depth of the layer (10-15%), thus increasing the reliability of the identification of the events recorded. A table is given showing the photographic parameters over the depth of emulsion layers processed by the ordinary method and under acoustical oscillations. It shows that acoustical oscillations raise the sensitivity-fog ratio by 15% on the average. The greatest intensification of all stages of the photographic development was noted in stages

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USSR

UDC 539.1.073.7:77.023:534.29

AKOPOVA, A. B., MAGRADZE, N. V., MELKUMYAN, L. V., SAL'MAN, A. G., Yerevan  
Physics Institute

"Acoustical Method for Processing of Glued Nuclear Emulsion Layers"

Moscow, Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, No. 6,  
Nov/Dec 71, pp 441-443

Abstract: Experiments were conducted on emulsion layers of the ER type of thickness 400 and 500  $\mu$  irradiated on the Yerevan accelerator by a 3.8 Gev electron beam with an intensity of  $10^4$  particles/cm<sup>2</sup>. The purpose of the study was to intensify the complete cycle of processing nuclear layers with an increase in the quality of the developed image. It was shown in developing the accelerated method for emulsion layer development in the free state by means of high-frequency ultrasonic oscillations that the method is inapplicable for glued layers due to the formation of a set of bubbles caused by certain features of the ultrasound. Upon going to the region of low sound frequencies free from such undesirable effects, it was possible to completely

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0135076  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYST. FIELD OF THE  
INCONGRUENTLY MELTING  $\text{LiCl} \cdot 2\text{NaCl}$  WAS DETD. AND PRESENTED ON A 3  
DIMENSIONAL PHASE DIAGRAM OF THE TITLE SYSTEM. CRYSTN. DIAGRAMS OF THE  
SURFACES OF  $\text{Li SUB2 Cl SUB2 Li SUB2 SO SUB4 (0.7 Na SUB2 Cl SUB2 PLUS}$   
 $0.3\text{K SUB2 Cl SUB2)}$  AND  $\text{Li SUB2 Cl SUB2, Li SUB2 SO SUB4 (0.58 Na SUB2 Cl}$   
 $\text{SUB2 PLUS 0.42 K SUB2 Cl SUB2)}$  WERE DETD. AND THEIR DIAGRAMS ARE GIVEN.  
FACILITY: KRASNODAR. POLITEKH. INST., KRASNODAR, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--LI SUB2 CL SUB2 NA SUB2 CL SUB2 K SUB2 CL SUB2 LI SUB2 SO SUB4  
QUATERNARY SYSTEM -U-  
AUTHOR-(03)-AKOPOV, YE.K., KOROBKA, YE.I., BERGMAN, A.G.  
COUNTRY OF INFO--USSR A  
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1351-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHASE DIAGRAM, LITHIUM CHLORIDE, SODIUM CHLORIDE, POTASSIUM  
CHLORIDE, SULFATE, CRYSTALLIZATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1402 STEP NO--UR/0078/70/015/005/1351/1353  
CIRC ACCESSION NO--AP0135076  
UNCLASSIFIED

USSR

UDC 669.725:620.172.2

KHENKIN, M.L., LOKSHIN, I.KH., LEVINA, N.K., and AKOPOV, I.A.

"Increasing the Resistance of Beryllium to Microplastic Deformations by Thermo-cyclic Treatment

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1971, pp 50-52

Abstract: A study was made of a method of improving beryllium's resistance to microplastic deformations by using a stabilizing treatment (i to e) consisting of several cycles of cooling ( $-50^{\circ}$ ,  $-72^{\circ}$ , and  $-196^{\circ}\text{C}$ ) followed by low-temperature heating ( $+100^{\circ}$  and  $+400^{\circ}\text{C}$ ). The results show that the relaxation stability increases 2 times with a temperature interval from  $-50^{\circ}$  to  $+100^{\circ}\text{C}$ , and increases further with an increasing temperature interval. The efficiency of treatment with an increasing number of cycles, practically speaking, does not increase after three cycles. Macro stresses also decrease with increasing relaxation stability. The observed increase in beryllium resistance to microplastic deformations is explained by processes of high-speed relaxation of micro stresses occurring at thermal cycling in overstressed microvolumes and by stabilization of thin structure in these volumes. It is assumed that the effect of the described treatment may be obtained on other metals and alloys with hexagonal lattice.

1/1

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135634

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. X RAY SPECTRA WERE USED TO STUDY THE BAND STRUCTURE IN CU SUB2 O CRYSTALS IN A BROAD ENERGY REGION. THE FINE STRUCTURE OF THE K EMISSION AND ABSORPTION SPECTRA OF CU IN CU SUB2 O WERE INVESTIGATED. COMPARISON OF THE OBSD. K SPECTRA WITH THE L SUBII,III SPECTRA OF CU AND THE K SPECTRUM OF O IN CU SUB2 O ENABLED ONE TO IDENTIFY 3 SEP. VALENCE BANDS IN THE ENERGY SPECTRUM OF CU SUB2 O: HIGH ENERGY 3D CU BAND, LOWER ENERGY 2P O BAND, AND THE LOWEST ENERGY 2S O BAND. ELECTRONIC TRANSITIONS FROM THE 3D BAND OF CU TO THE LEVELS 1S CU, 2P SUBTHREE HALVES, ONE HALF CU AND 1S O LEAD TO THE FORMATION OF THE SHORTEST WAVELENGTH CU K BETA PRIMEI SUB5 (B), CU L ALPHA PRIMEI SUB1,2, L BETA PRIMEI SUB1 (B) AND O K ALPHA PRIMEI (B) EMISSION BANDS. TRANSITIONS FROM THE "2P O BAND" ONTO THE LEVELS 1S CU AND 1S O ARE RESPONSIBLE FOR LONGER WAVELENGTH BANDS CU K BETA PRIMEII SUB5 (A) AND O K ALPHA PRIMEII (A). THE ORIGIN OF THE CU K BETA PRIME PRIME LINE IS RELATED TO "2S O-1S CU" TRANSITIONS. IN TERMS OF THE RESULTS OF THEORETICAL CALCNS. OF THE ENERGY BANDS OF CU SUB2 O, THE ORIGIN OF ALL FINE DETAILS OF THE STRUCTURE AND PECULIARITIES OF THE X RAY SPECTRA OF CU SUB2 O CRYSTALS IS EXPLAINED. FACILITY: INST. KATAL., NOVOSIBRSK, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--X RAY SPECTRAL STUDY OF CUPROUS OXIDE -U-  
AUTHOR--AKOPDZHANY, R.G. A  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1393-8  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COPPER OXIDE, X RAY ANALYSIS, CHEMICAL BONDING, BAND SPECTRUM,  
ENERGY SPECTRUM  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/0137 STEP NO--UR/0181/70/012/005/1393/1398  
CIRC ACCESSION NO--AP0135634  
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEST INSTALLATIONS FOR SUBCRIT. AND SUPERCRIT. PRESSURE BOILER SYSTEMS SHOULD NOT BE MADE AS USUAL FROM STAINLESS STEEL BUT FROM THE SAME MATERIALS AS TO BE USED FOR THE CONSTRUCTION OF THE PRODUCTION UNITS. IN GENERAL, DEFECTS ARE FREQUENTLY VISIBLE NEAR WELDED JOINT, BENDS, AND ON LIGHT SLOPING AND HORIZONTAL TUBES. HEAT LOADING, MEDIUM TEMP., MASS VELOCITY, SUBCRIT. PRESSURE, AND VAPOR CONTENT OF THE FLOW HAVE EFFECT ON THE SIZE OF THE DEFECT. ON C STEEL AND ON LOW ALLOY STEEL PROTECTION WITH A FILM OF FE OXIDE CAN BE ACHIEVED BY A PROCESS OF THERMAL DISSOCN. OF FE COMPLEXONATES. THE OPERATING PROCESS FOR SUPERCRIT. PRESSURE BOILERS REQUIRES A RECIRCULATION PUMP, THE HYDRODYNAMICS AND HEAT TRANSFER CONDITIONS ALSO NECESSITATE A RECIRCULATION PUMP.

UNCLASSIFIED



1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STEAM AND WATER CORROSION OF HEATING SURFACES UNDER EXTREME HEAT  
LOADING -U-  
AUTHOR-(02)-AKOLZIN, P.A., MARGULOVA, T.KH.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(4), 73-4

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--CARBON STEEL, STEAM BOILER, CORROSION RATE, STAINLESS STEEL,  
IRON OXIDE, LOW ALLOY STEEL, HIGH TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO-----FD70/605019/B06 STEP NO--UR/0096/70/017/004/0073/0074

CIRC ACCESSION NO--AP0140899

UNCLASSIFIED

USSR

UDC 621.314.58 (083.8)

AKODIS, M.M., DROBININA, T.YA., UKHOV, V.S., SHIPITSIN, V.V. [Ural'sk politekhn. in-t--Ural Polytechnical Institute]

"Frequency Converter Using Controlled Rectifiers"

USSR Author's Certificate No 267763, filed 16 Jan 68, published 9 July 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B565P)

Translation: In order to increase the effectiveness and reliability of thyristor frequency converters which contain saturable reactors, it is proposed in shunting thyristorized networks to connect a semiconductor diode and a resistor in parallel and to include a capacitor in series with them. 1 ill. I.R.

USSR

UDC: 621.317.32.023

AKHAYEV, R. F., ROZHDESTVENSKAYA, T. B.

"New Equipment for Measuring Effective Voltage over a Broad Frequency Range"

Moscow, Izmeritel'naya Tekhnika, No 5, May 70, pp 55-59

Abstract: The authors consider the basic principles of design of wide-range thermal converters developed for precision measurement of the effective AC voltage by the method of comparison with a DC voltage. This equipment can be used to measure voltage in the range from 0.1 to 150 volts at frequencies of 20 Hz to 30 MHz with an accuracy of 0.01-0.2%.

1/1

- 47 -

Nickel

USSR

UDC 669-405:537+  
535

AKMURADOV, B., and KURBANNIYAZOV, N.

"Dependence of the Hall Effect and Electrical Resistance of  
Nickel-Cobalt Alloys on Temperature"

Izv. AN Turkmenskoy SSR, Ser. Fiziko-Tekhnicheskikh, Khimicheskikh  
i Geologicheskikh Nauk, No 2, 1971, pp 96-98

**Abstract:** The dependence of the Hall electromotive force and  
electric resistance of nickel-cobalt alloys on temperature was  
studied in order to test the conclusions of the theory presented  
in earlier works. The results of the measurements were used  
to determine the values of the anomalous Hall constant  $R_s^1$  at

various temperatures. The Hall parameters presented in formulas  
in the earlier works (not presented in this work) were found to  
be strongly dependent on composition in the nickel-cobalt system.  
They even change their sign upon transition to nickel-cobalt  
alloys with cobalt concentration between 20 and 30%. These re-  
sults agree well with the basic conclusions of the earlier works.  
1/1

Nickel

USSR

UDC 669-405:537+  
535

AKMURADOV, B., and KURBANNIYAZOV, N.

"Dependence of the Hall Effect and Electrical Resistance of  
Nickel-Cobalt Alloys on Temperature"

Izv. AN Turkmenskoy SSR, Ser. Fiziko-Tekhnicheskikh, Khimicheskikh  
i Geologicheskikh Nauk, No 2, 1971, pp 96-98

Abstract: The dependence of the Hall electromotive force and  
electric resistance of nickel-cobalt alloys on temperature was  
studied in order to test the conclusions of the theory presented  
in earlier works. The results of the measurements were used  
to determine the values of the anomalous Hall constant  $R_s^1$  at

various temperatures. The Hall parameters presented in formulas  
in the earlier works (not presented in this work) were found to  
be strongly dependent on composition in the nickel-cobalt system.  
They even change their sign upon transition to nickel-cobalt  
alloys with cobalt concentration between 20 and 30%. These re-  
sults agree well with the basic conclusions of the earlier works.

1/1

USSR

KONDORSKIY, YE. I., et al, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 207-209

parameters  $a$ ,  $b$ ,  $\alpha$ ,  $\beta$  and resistivity  $\rho$  for different crystal lattices of alloys. It appears that  $\alpha/a$   $T/\rho$  and  $\frac{\beta}{b} \frac{T}{\rho}$  vary within limits predicted in

earlier research. The experimental results support the validity of the theoretical formulas derived by other investigations and indicate, specifically, that the ratio  $Q_i/R_s \frac{\rho}{T}$  (Hall and N.-E. emf values), respec-

tively for most Ni-Co alloys are independent of temperature. There is a weak temperature dependence of this ratio for nickel and nickel-rich alloys.

(1 illustration, 1 table, 9 bibliographic references).

2/2

USSR

UDC: 669.24:538.632

KONDORSKIY, YE. I., VASIL'YEVA, R. P. and AKMURADOV, B., Moscow State University imeni M. V. Lomonosov

"The Ratio of Nernst-Ettingshausen and Hall's Anomalous Constant Effects in Nickel-Cobalt Alloys"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 207-209

Abstract: Discussed are the results of measurements of the Hall and Nernst-Ettingshausen's (N.-E.) effects and resistivity for nickel-cobalt alloys at various temperatures. Involved is a series of nickel-cobalt alloys containing from 10 to 90% Co, as well as Co and Ni specimens. The nickel-cobalt alloys show various crystal structures depending on Co contents. Alloys containing up to 70% Co have a densely packed hexagonal crystal structure; alloys of lower cobalt concentrations have a face-centered cubic lattice. Both Hall and N.-E. emf and resistivity values were determined in vacuum ( $10^{-2}$ -- $10^{-3}$  mm Hg) on one and the same specimens at temperatures ranging from room to 500°C. A table presents the values of

USSR

UDC 621.382.3

ZVIAGIN, V.I., SUNEY, YU. I., ZATLOKA, S.I., YEGOROV, A.I., ARMENTIN'SH, YA.YA.,  
FUNDUR, P.A.

"Determination Of The Effectiveness Of Collecting Charge Carriers In Semiconduct-  
or Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Technology.  
Scientific-Technical Collection. Microelectronics), 1970, Issue 2(23), pp 67-70  
(from RDh--Elektronika i yeye primeneniya, No 4, April 1971, Abstract No 4E33)

Translation: The method described for determination of the effectiveness of  
collection of non-equilibrium carriers in various regions of a silicon planar  
transistor involves measurement of the charge collected by a p-n junction.  
Corresponding measurements are conducted on a KT331 device before and after  
irradiation by nuclear radiation. Formulas are given which connect the effect-  
iveness of collection with the volume life time of non-equilibrium charge  
carriers. Author's abstract.



USSR

UDC 621.382.7

PUNDUR, P.A., AKMENTYN'SH, YA.YA., BERZIN'SH, A.A., DANE, B.YA., SOLENS, V.YA.,  
KOKORISH, YE. YU., PURMIT, YA. A.

"Silicon Low-Noise High-Frequency Unencapsulated Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Technology.  
Scientific-Technical Collection. Microelectronics), 1970, Issue 2(23), pp 81-  
86 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No  
4B245)

Translation: The construction, technology, and principal parameters are des-  
cribed of silicon planar unencapsulated low-noise high-frequency  
n-p-n type transistors for hybrid circuits.

2/2 026 UNCLASSIFIED PROCESSING DATE--ZONGV70  
CIRC ACCESSION NO--AAC152106  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELECTROLYTE FOR DEPOSITION OF  
IN,GA ALLOY HAS THE FOLLOWING COMPN. IN CHLORIDE 50-150, GA CHLORIDE  
2.5-25, GLYCINE 30-60, AND PHENOL 0.3-1 G-L.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--ELECTROLYTE FOR DEPOSITION OF INDIUM GALLIUM ALLOY -U-

AUTHOR--(05)-AKMENS, YA.P., MIKHALOVICH, D.L., RIKMAN, S.I., OZOLINSH,  
I.M., UDEM, D.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,095

REFERENCE--DIZRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, INDIUM ALLOY, GALLIUM ALLOY,  
PHENOL, GLYCINE, INDIUM CHLORIDE, GALLIUM CHLORIDE, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1841

STEP NO--UR/0432/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132106

UNCLASSIFIED

AKMAL'KHANOV, Sh.

Soviet 5-31  
27 SEP 71

9/5

## DEVELOPMENT OF POTENTIAL FOR UZBEK ANIMAL HUSBANDRY CONSIDERED

Article by Sh. Akmal'Khanov and A. Khalikov, director of the Uzbek Scientific-Research Institute for Animal Husbandry and candidate of the Agricultural Sciences, respectively; what a Ponder Hockare Must Be; Moscow, Pravda, Russia, 30 August 1971, p. 27

Lucerne crops in Uzbekistan will by the end of the Five-Year Plan period occupy an area of over 600,000 hectares. The value of this crop is becoming higher. Over a season -- from early spring to late fall -- it produces under our conditions 3-6 cuts and ensures the uniform supply of animals with green fodder.

Until last recently lucerne was sown in pure form. Although its harvests were worthy of note, the results were even better when it was planted with other plants. The experiments of scientists and the experience of farmers have shown that corn is a worthy ally of lucerne. With their joint sowing, a hectare of sown land produces 300-350 centners of corn for seedlings and 15-20 centners of lucerne hay.

Corn and lucerne grown for ensilage and grain occupy a substantial niche in the structure of green herbage. Corn produces a good harvest on relatively little water and in sufficient water. In cold regions, to ensure and increase moisture around water and in regions having inadequate water, the sown crops are with corn -- a salt-tolerant and drought-resistant crop. It is a pity that the specialists and breeders of some collective and state farms do not always take these biological features of the crops into consideration.

There is also another crop that strikes root alongside lucerne, considerably supplementing it. This is Sudan grass, every hectare of which produces as much as 200 centners of green mass.

There are also lucerne and lucerne about early during early spring or late spring. These so-called "winter" have been to be the necessary early sown in Uzbekistan to grow intermediate

USSR

UDC 632.95

PAVLENKO, A. P., AKGERYAN, V. P., MOSCHITSKIY, S. D., and ZEMLYAKOVA, N. G.

"Alkoxylation of 2,3,5,6-Tetrachloro, 2-Trichloromethyl-3,5-dichloro- and 2-Trichloromethyl-3,5,6-trichloropyridyl-4-amidophosphoric Acid Dichlorides with Higher Alcohols"

Alkoksilirovaniye dikhlorangidridov 2,3,5,6-tetrakhlor-, 2-trikhlormetil-3,5-dikhlor- i 2-trikhlormetil-3,5,6-trikhlorpiridil-4-amidofosfornoy kisloty vysshimi spirtami (Cf. English above), Institute of Organic Chemistry, Academy of Sciences Ukrainina SSR, Kiev, 1972, 4 pp, ill., bibliography with one title, Manuscript No 4383-72 of 5 May 72 deposited at All-Union Institute of Scientific and Technical Information (from RZh-Khimiya, No 20, 25 Oct 72, Abstract No 20N594 Dep from Authors' summary)

Translation: For the purpose of finding new plant growth regulators, 2,3,5,6-tetrachloro-, 2-trichloromethyl-3,5-dichloro- and 2-trichloromethyl-3,5,6-trichloropyridyl-4-amidophosphoric acid dichlorides were alkoxyated with hexyl, heptyl, octyl, nonyl, decyl and cetyl alcohols. In biological tests the strongest herbicidal properties were exhibited by the dioctyl ester of 2-trichloromethyl-3,5-dichloropyridyl-4-amidophosphoric acid.

1/1

USSR

AKIYEV, A. K., Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5(15), Saratov, 1970, pp 45-57 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.91)

sharply increase following migration of mice from fields to populated agricultural areas. 5. Plague epizootics among synanthropic rodents have more epidemic character because they occur in the immediate vicinity of humans, in their dwellings. 6. Bubonic plague, in the presence of large numbers of fleas in human dwellings, can be the origin of an outbreak of anthroponotic bubonic plague. 7. The source of outbreaks of primary pneumonic plague are, as a rule, bubonic plague patients in whom the infection process has become more intensive.

2/2

USSR

UDC 911.3.616.981.452

AKIYEV, A. K.

"The Epidemiology of Plague With Epizootiological Elements"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5(15), Saratov, 1973, pp 45-57  
(From RZh-Meditrinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.91)

Translation: Basic principles of plague epidemiology, including its epizootiological characteristics as well as the possibility for transition into anthroponotic form in human society, are presented in schematic form: 1. In the zone of a stable natural plague focus, the occurrence of individual sporadic human disease cases is possible only when the human actively intervenes in the course of the epizootic process. 2. During a time of active epizootics in the zone of entrance of the infection, or at the time of mass increase in the population of secondary vectors, there is a sharp increase in the probability of attack of "non-host" fleas on humans. 3. The involvement of camels in the epizootic process intensifies the epidemic quality of plague and often leads to human illness. 4. The epidemiological significance of ephemeral plague epizootics consists of the regular influx of plague infection into a population of synanthropic rodents whose number.

1/2

USSR

UDC 911.3:616.981.452

AKIYEV, A. K.

"The State of the Problem Regarding Research on Retention of Plague Bacteria During Interepizootic Years"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works), Vyp. 4 (14), Saratov, 1970, pp 13-33 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.92)

Translation: The following definition on retention mechanism of plague bacteria during interepizootic years is advanced as a working hypothesis: during nonepizootic years the plague pathogen is retained in individual microfoci and in minor "small foci," constantly shifting through the natural focus territory. One of the laws of existence of the micro focus is the movement of the bacteria in an uninterrupted chain of acute cases of rodent plague, the other is a prolonged (over 5-7 years) survival of plague-infected fleas in earth-blocked burrows.

1/1



Higher Algebra and Geometry and Topology

USSR

UDC 512.972

AKIVIS, M. A. and SHELEKHOV, A. M.

"Calculation of Curvature and Torsion Tensors of a Multidimensional Three-Sheet and the Associator of the Local Quasigroup Associated With It"

Moscow, Sibirskiy Matematicheskiy Zhurnal, Academy of Sciences SSR, Siberian Department, Vol 12, No 5, Sep/Oct 71, pp 953-960

Abstract: A relationship is established between two methods of assigning a three-sheet  $W_r$  on a differentiable manifold  $X_{2r}$ : using three systems of wholly integrable Pfaff equations, and using finite equations. The invariants of the sheet assigned by the finite equations are computed. The formulas obtained are used in computing tensors of curvature and torsion of a three-sheet  $W_r$  generated by a local analytic quasigroup  $Q_r$ . The relationship between the associator of this quasigroup and the curvature tensor of the three-sheet  $W_r$  is found. This relationship is used to obtain the necessary conditions for closure of the figures of Rodemeister and Bolya and hexagonality on the sheet  $W_r$ , expressed in terms of the curvature tensor of the sheet.

Acc. Nr:

AP0049856

Abstracting Service:

CHEMICAL ABST. 5-76

Ref. Code:

4P 0365

103220n Corrosion resistance of metallic materials during the fluorination of aqueous solutions of polynitro compounds. Bakhmutova, G. B.; Senichev, Yu. N.; Akishina, M. A.; Bocharova, N. A. (USSR). *Zashch. Metal.* 1970, 6(1), 42-3 (Russ). The corrosion resistance of a no. of metals such as simple steel, stainless and special steels, Cu and its alloys, and Al alloys, was investigated in media where the process of  $\text{CF}(\text{NO}_2)_3$  prepn. was proceeding by fluorination with elementary F of 20% aq. solns. of  $\text{HC}(\text{NO}_2)_3$  or  $\text{NaC}(\text{CO}_2)_3$  as well as in pure  $\text{CF}(\text{NO}_2)_3$ . Corrosion of the metal samples was studied, in exit gases in the liq. as well as the vapor phase. The highest corrosion rate was noted in  $\text{HC}(\text{NO}_2)_3$ , lower in  $\text{NaC}(\text{NO}_2)_3$ , and in  $\text{CF}(\text{NO}_2)_3$  soln. all the metals were very stable. Corrosion was much more intensive in the vapor phase, the main corrosive factors being  $\text{H}_2\text{F}_2$  and F. The introduction into solns. of  $\text{NaHCO}_3$ , which binds the nonreacted F, significantly reduced corrosion, esp. in the vapor phase. J. Liskowacki -

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REEL/FRAME  
19801781

7

USSR

DRUY, E. G., et al., Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 42-44

must assume that substances evolved by the roots of grapevines subjected to the action of I had an inhibiting effect on the azotobacter, because I acting on azotobacter directly or on the soil in the concentrations that were present could have had no effect on the microorganism, on the basis of the results obtained in the study. G. N. Deniskina participated in the work reported.

2/2

- 51 -

USSR

UDC 632.95.024.1

DRUY, E. G., KHOKHRYAKOVA, V. S., SHUSTOVA, V. P., and AKTISHINA, L. F., All-Union Scientific Research Institute of Chemical Means for Plant Protection

"Effect of Organochlorine Insecticides on Azotobacter"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 42-44

Abstract: DDT or hexachlorane applied for the treatment of the soil of wheat and cotton fields had no effect on the azotobacter in the soil. Application of hexachlorobutadiene (I) in amounts of 75-700 g/m<sup>2</sup> to the loamy chernozem soil of vineyards in Moldavia for the control of phylloxera inhibited the development of azotobacter in the soil, as shown by tests carried out 18 mos. after the spraying of I. Laboratory experiments with soil that had been inoculated with a culture of Azotobacter chroococcum showed that I applied to the soil in amounts of 15-60 g/m<sup>2</sup> did not have a harmful effect on the development of the microorganism. Soil of the chernozem and sod-podzol types treated with I in amounts of 5-500 mg/kg was not toxic to azotobacter (the amount of I present in the soil under practical conditions does not exceed 150-500 mg/kg). It had been established by Khokhryakova, et al (Khimiya v Sel'skom Khozyaystve, No 5, 1966) that I in amounts >50 g/m<sup>2</sup> has a toxic effect on grapevines. One

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS SPECTRA OF GASEOUS PHASES OVER NAF-BAF SUB2 AND NAF-MGF SUB2 SYSTEMS WERE STUDIED AT 1160-1450DEGREES, AND FOR THE COMPN. RANGES UP TO 90 WT. PERCENT BAF SUB2 AND 60 WT. PERCENT MGF SUB2. AT 1160-1170DEGREES, THE NA PRIME POSITIVE, NAF PRIME POSITIVE, NA SUB3 F SUB2 PRIME POSITIVE, BA PRIME POSITIVE, BAF PRIME POSITIVE, MG PRIME POSITIVE, AND MGF PRIME POSITIVE IONS WERE FORMED. THE OCCURRENCE OF NAMGF SUB2 PRIME POSITIVE WAS ALWAYS LESS THAN 0.001PERCENT WHEREAS HIGHER AMTS. OF NABAF SUB2 PRIME POSITIVE WERE OBSD. (IS LESS THAN 6PERCENT AT 1460DEGREES FOR THE SYSTEM WITH 90 WT. PERCENT BAF SUB2).

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--MASS SPECTROMETRIC STUDY OF THERMODYNAMIC PROPERTIES OF SODIUM  
FLUORIDE BARIUM FLUORIDE AND SODIUM FLUORIDE, MAGNESIUM FLUORIDE SYSTEMS  
AUTHOR-(03)-BELOUSOV, V.I., SIDOROV, L.N., AKISHIN, P.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 263-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--MASS SPECTRUM, THERMODYNAMIC PROPERTY, SODIUM COMPOUND, BARIUM  
FLUORIDE, MAGNESIUM FLUORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1983/0315

STEP NO--UR/0076/70/044/001/0263/0264

CIRC ACCESSION NO--AP0053300

UNCLASSIFIED

USSR

UDC 535

SHAKHPARONOV, M. I., AKISHIN, P. A.

"Problems in Molecular Optics"

Voprosy molekulyarnoy optiki. Sovrem. probl. fiz. khimii, 5 (cf. English above, Modern Problems in Chemical Physics, 5), Moscow, Moscow University, 1970, 487 pp, ill., 2 r., 2 k (from RZh-Fizika, No 7, Jul 71, Abstract No 7D912K)

Translation: Papers, discussions on them, and resolutions are published in the collection that were made at the symposium "Rayleigh Scattering of Light and the Structure of Fluids" (29-31 January 1968; Chemistry Faculty of Moscow State University). Contents: general problems (5 papers); spectrum of a Rayleigh line (9 papers); scattering of light in the neighborhood of the critical point (7 papers); miscellaneous (2 papers).

1/1

USSR

UDC 545.85

SIDOROV, L. N., BELOUSOV, V. I., and AKISHIN, P. A., Moscow State University  
imeni M. V. Lomonosov

"Mass-Spectroscopic Study of Thermodynamic Properties of NaF-BeF<sub>2</sub> System.  
VI. Temperature Dependence of Partial Pressures and Dissociation Enthalpy  
of Complex Molecules"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, Vyp 12, 1971, pp 3007-3011

Abstract: Partial pressures of NaF, Na<sub>2</sub>F<sub>2</sub>, BeF<sub>2</sub>, NaBeF<sub>3</sub>, Na<sub>2</sub>Be<sub>2</sub>F<sub>6</sub>, and Na<sub>2</sub>BeF<sub>4</sub> in the NaF - BeF<sub>2</sub> system were determined as a function of temperature (up to 1106°K), with BeF<sub>2</sub> concentrations from 0-100%. Using the results obtained in previous work, the authors calculated the heat of vaporization of NaF and BeF<sub>2</sub> on the assumption that in the melt  $\Delta \bar{S}_i = 0$ , and of NaBeF<sub>3</sub>, Na<sub>2</sub>Be<sub>2</sub>F<sub>6</sub>, and NaBeF<sub>4</sub> with the aid of Hess' law from the heat of appropriate gas-phase reactions. Gibbs' free energy, and the heat of formation of NaF - BeF<sub>2</sub> from liquid BeF<sub>2</sub> and solid NaF at 1106°K as well as the entropy, enthalpy, and Gibbs' free energy for nine gas-phase reactions involving the same complex molecules are also presented. The absolute energy values for NaBeF<sub>3</sub>, Na<sub>2</sub>BeF<sub>4</sub>, and Na<sub>2</sub>Be<sub>2</sub>F<sub>6</sub> calculated in this work are  $S_{1106}^\circ = 103.4 \pm 3$ ,  $150.6 \pm 5$ , and  $182.3 \pm 8$ , resp. The assumed structure of the molecules are also given. The experimental results are presented in 7 tables.

1/1



Acc. Nr:

AP0050042

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code:

4R0368

94391q Interaction of a high-frequency discharge plasma with the surface of some dielectrics. Akishin, A. I.; Blyudov, E. V.; Guzhova, S. K.; Isaev, L. N.; Solov'ev, G. G.; Titov, V. I. (USSR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 13-16 (Russ).

An expt. was performed, imitating the effect of the ionic component of the upper atm. on some dielec. materials (satellite surfaces) present in a plasma of a high-frequency discharge. Optical properties, such as reflection and transmittance coeffs., of a series of dielec. materials were detd. in ionic plasmas of 5-40 eV energy. The reflection coeffs. of dielects. in the visible range decreased markedly due to interaction with  $O^+$ ,  $N^+$ ,  $H^+$ , or  $He^+$ . The effect of  $O^+$  was the greatest.

HMJR ..

IB

REEL/FRAME  
19801981

USSR

AKISHIN, A. I., et al., Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3,  
Sep 71, pp 471-475

are continuous and do no change under lengthy irradiation. The article contains 2 illustrations and 2 tables.

2/2

- 99 -

USSR

UDC 535.376

AKISHIN, A. I., BESSONOVA, T. S., and VASIL'YEV, S. S.

"Electron and Proton Radioluminescence of Optical Glasses"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 471-475

Abstract: The authors discuss the results of investigating the different characteristics of the cross section of multicomponent silicate optical glasses by exciting them with electrons and protons. They established that the luminous flux of the radioluminescence of the optical glasses depends linearly on the intensity of the ionizing radiation. The energy yield of luminescence during proton excitation is lower than the energy yield during electron excitation. The basic components of the glasses influencing their luminescence capacity are the oxides of silicon, barium, and lead. They found that with a lengthy electron and proton irradiation of glasses not containing lead oxide an increase takes place in the luminescence yield. The luminescence yield of glasses containing lead oxide remains constant in the irradiation process. At high temperatures, for glasses irradiated by large doses in which there is no lead oxide, thermoluminescence is generated. In all glasses containing lead oxide no thermoluminescence is observed regardless of the degree of their darkening. The radioluminescence spectra of all the glasses, in spite of the formation of color centers and growth in luminescence capacity,

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2/2 010

UNCLASSIFIED


PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0109232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOPIC OF THE ARTICLE IS THE MOSCOW MILITARY SCHOOL OF CIVIL DEFENSE, U.S.S.R., MOSKOVSKOYE VOYENNOYE UCHILISHCHE GRAZHDANSKOY OBORONY S.S.S.R. THE SCHOOL, FOUNDED IN MAY, 1970, TRAINS COMMAND CADRE FOR CIVIL DEFENSE UNITS. AFTER THREE YEARS OF STUDIES, ITS GRADUATES ARE CONFERRED THE TITLE OF OFFICER AND A DIPLOMA CERTIFYING THE COMPLETION OF COURSES IN SUCH SPECIALTIES AS ROAD BUILDING MACHINES AND EQUIPMENT, RADIO COMMUNICATION, RADIO BROADCASTING, AND ANALYTICAL CHEMISTRY.

ZZZZZZZZZZZZ

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--GOOD TRADITIONS ARE STARTED -U-  
AUTHOR--AKISHIN, A.   
COUNTRY OF INFO--USSR  
SOURCE--SOVETSKIY PATRIOT, JUNE 10, 1970, P 2, COLS 4-7  
DATE PUBLISHED--10JUN70  
SUBJECT AREAS--MILITARY SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES  
TOPIC TAGS--CIVIL DEFENSE TRAINING, MILITARY SCHOOL, HIGHWAY ENGINEERING,  
RADIO COMMUNICATION, ANALYTIC CHEMISTRY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/1113 STEP NO--UR/9023/70/000/100/0002/0002  
CIRC ACCESSION NO--AN0109232  
ZZZZZZZZZZZZ UNCLASSIFIED

USSR

UDC 547.912.22;677.46/49

SINDO, AKIO, Tokyo

"Carbonization of Polymers and the Preparation of Carbon Filaments"

Moscow, Uspekhi Khimii, Vol 42, Vyp 2, 1973, pp 301-322

Abstract: The article deals with the change in physical properties during the carbonization of highly polymerized cellulose (CL) and polyacrylonitrile (PACN) fibers at temperatures to 1000°C. There are five other short sections: 1) the general crystallographic properties and forms of carbon; 2) the influence of different environmental conditions on the carbonization of such polymers as polyvinylchloride (PVC); 3) the three forms of carbon-filament structures using CL, PACN, vinylone, pitch, lignin-polyvinyl alcohol, phenol-furfuryl, and high-temperature fibers as examples; 4) the intermolecular condensation of aromatic polymers, such as CL and PACN, tending towards the graphite structure; and 5) the physical and mechanical properties of CL and PACN fibers and their graphitized products

1/1

USSR

UDC 576.893.192.1(047)

AKINSHINA, G. T. and ZASUKHIN, D. N., Toxoplasmosis Laboratory, Department of Natural Focus Diseases, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"New Data on Toxoplasmosis. 1. The Agent of Toxoplasmosis. Review of the Literature"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 608-614

Abstract: A detailed survey is presented of recent Soviet and foreign publications under the following headings: (a) morphology of Toxoplasma; (b) movement of Toxoplasma and penetration of cells; (c) multiplication of Toxoplasma; (d) developmental cycle of Toxoplasma; (e) cytochemical and biochemical study of Toxoplasma; (f) culturing Toxoplasma and maintaining laboratory strains (including a brief discussion of a method developed by the authors for cloning Toxoplasma based on tissue culture technique); (g) taxonomic position of Toxoplasma.

1/1

Magnesium

USSR

UDC 669.721.884

VYATKIN, I. P., MUSHKOV, S. V., KECHIN, V. A., and AKININA, N. K.

"Purity of the Starting Material for Magnesium-Lithium Alloys"

Tsvetnye Metally, No 4, Apr 71, p 53

Abstract: Since traces of sodium in a magnesium-lithium alloy increase its brittleness, a study was made to determine the maximum allowable amounts of sodium which may be present in the raw materials used for the electrolytic production of the alloy. The use of carnallite with a maximum amount of 7.5% magnesium chloride for electrolysis allowed the production of magnesium-lithium alloy ingots with a maximum sodium content of 0.003%.



USSR

ZOLOFUKHIN, I. V., et al., Problemy Prochnosti, No 9, Sep 73, pp 86-89

values are on the average 17-23% smaller than at room temperature. 4 figures.  
1 table. 14 references.

USSR

UDC 539.4

ZOLOTUKHIN, I. V., AKININ, K. G., ABRAMOV, V. V., KETUSOV, Ye. K.,  
SKOROBOGATOV, V. S., and SVEDOMTSEV, N. V. (Voronezh)

"Investigation of the Damping and Elastic Characteristic of Plasma Coatings  
of Tungsten, Nichrome, Zirconium Dioxide, and Chrome-Nickel Spinel"

Kiev, Problemy Prochnosti, No 9, Sep; 73, pp 86-89

Abstract: Consideration is given to problems connected with study of the damping and elastic characteristics of thin plasma coatings. The influence of the conditions of application and annealing of the coatings upon the value of oscillation attenuation and the modulus of elasticity. The results of investigation of the modulus of elasticity are presented in a table and in three figures. For tungsten coatings, the modulus of elasticity is characterized by considerable scattering of the values -- from  $2 \cdot 10^5$  kg/cm<sup>2</sup> to  $17 \cdot 10^5$  kg/cm<sup>2</sup>.

The relationship of the modulus of elasticity of the coatings to the temperature, before and after annealing, is shown. Analysis of the  $E - t$  relationships of tungsten and zirconium dioxide coatings shows that in the temperature interval from 20 to 800°C the values of the elasticity modulus  $E$  change insignificantly (within the limits of 2-10). For nichrome coatings  $E$  decreases more intensively with a temperature rise, and at  $t = 800^\circ\text{C}$  its  $1/2$

USSR

AKINFIYEV, V. I., et al., Proizvodstvo Chernykh Metallov, No 75, Metallurgiya Press, 1970, pp 48-52

of melting in most cases occurred more intensively than during the period of finishing. Worsening of desulfuration of the bath by the furnace atmosphere during the finishing period is explained not only by the decrease in activity of sulfur during this period, but also by the increase in basicity of the slag. The rate of desulfuration of the bath by the gas phase during blown melts differs slightly from its values during standard melts. 3 figures; 8 biblio. refs.

2/2

USSR

UDC 669.183.218.5

AKINFIYEV, V. I., DUNETS, A. M., and PANTELEYEVA, R. I.

"Sulfur Exchange in the Bath-Gas Phase System in an Open-Hearth Furnace With Blowing of Powdered Materials in a Stream of Oxygen Through the Metal and Without Blowing"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 48-52

Translation: The exchange of sulfur between bath and gas phase in a 10 T open-hearth furnace is studied during the period of melting and finishing in melts with blowing of iron ore concentrate and oxygen through the bath and without blowing.

The characteristics of participation of the gas phase in the desulfuration of the metal used in the work were not the concentration of sulfur in the combustion products, but rather its relative quantity (in relationship to the mass of metal), carried away by the combustion products from the working space per unit time. This quantity was determined for the period of melting and finishing of melts and for the blowing period in experimental melts. The combustion products were taken for analysis using a special device developed for the purpose.

It was established that desulfuration of the gas phase during the period

1/2

USSR

UDC 669.046.5

MAKSIMOV, Ya. M., AKIMFIYEV, V. I., DUNETS, A. M., and PROGONOV, V. V.

"Intensification of Metal Desulfuration by Blowing With Dust-Like Lime in an Oxygen Stream"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 130-132

Translation of Abstract: Data on test heats with separation of limestone from the charge are given, during which the metal desulfuration process ran successfully in the case of a high rate of lime feeding into the bath. Data are presented on determining the relation between the rates of metal desulfuration and CaO feeding by the method of correlation analysis. Test results on the possibility of controlling the correlation of desulfuration and decarburization rates by varying the CaO concentration in the oxygen stream are presented. 1 figure, 2 references.

1/1

USSR

AKINFIYEV, V. I., et al., Proizvodstvo Chernykh Metallov, No 75, Metallurgiya Press, 1970, pp 48-52

of melting in most cases occurred more intensively than during the period of finishing. Worsening of desulfuration of the bath by the furnace atmosphere during the finishing period is explained not only by the decrease in activity of sulfur during this period, but also by the increase in basicity of the slag. The rate of desulfuration of the bath by the gas phase during blown melts differs slightly from its values during standard melts. 3 figures; 8 biblio. refs.

2/2

USSR

UDC 669.183.218.5

AKINFIYEV, V. I., DUNETS, A. M., and PANTELEYEVA, R. I.

"Sulfur Exchange in the Bath-Gas Phase System in an Open-Hearth Furnace With Blowing of Powdered Materials in a Stream of Oxygen Through the Metal and Without Blowing"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 48-52

Translation: The exchange of sulfur between bath and gas phase in a 10 T open-hearth furnace is studied during the period of melting and finishing in melts with blowing of iron ore concentrate and oxygen through the bath and without blowing.

The characteristics of participation of the gas phase in the desulfuration of the metal used in the work were not the concentration of sulfur in the combustion products, but rather its relative quantity (in relationship to the mass of metal), carried away by the combustion products from the working space per unit time. This quantity was determined for the period of melting and finishing of melts and for the blowing period in experimental melts. The combustion products were taken for analysis using a special device developed for the purpose.

It was established that desulfuration of the gas phase during the period  
1/2

Acc. Nr:  
AP0045018

Abstracting Service: 5/70 Ref. Code:  
INTERNAT. AEROSPACE ABST. 74R0109

A70-22402 A method of investigating the scattering of electromagnetic waves in the resonance range (Ob odnom metode issledovaniia rasseianiia elektromagnitnykh voln v rezonansnoi oblasti). V. V. Karnishin, V. V. Akindinov, and V. V. Vishin. *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 14-20. 7 refs. in Russian.

Application of the method of characteristic waves for solving the problem of electromagnetic wave diffraction by bodies of simple geometrical shape in the resonance range of frequencies where the incident wavelength is comparable to the body's dimensions. The fields of the characteristic waves are determined by expansion in terms of multipoles with subsequent fulfillment of the boundary conditions in individual surface points of the body (collocation method). A computer is used to solve the system of algebraic equations obtained in the process. The scattered field is represented in terms of characteristic wave series. Results are given for a sphere and a spheroid.

T.M.

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REEL/FRAME  
19771914



USSR

UDC 615.28:632.957.015.4

ORLOVA, N. V., KHOVAYEVA, L. A., and AKINCHEVA, M. YA., Laboratory of  
Pesticide Toxicology, Institute of Nutrition, Academy of Medical Sciences  
USSR, Moscow

"Special Aspects of the Effect of Pesticides of Different Chemical Structure  
on Warm-blooded Animals"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 71, pp 32-38

Abstract: Biochemical processes were investigated in the gonads, brain, liver, and blood of male and female Wistar rats receiving small daily peroral doses of ethylene-bis-dithiocarbamates (maneb and zineb, 30 mg/kg) for 5 months. Maneb and Zineb induced shifts (usually decrease in level) in the activity of several enzymes, especially dehydrogenases and aminotransferases, changes in SH-group concentrations in the various organs, and reduction in the fructose concentration in male sex organs. Keltan exerted selective effects on the enzymatic systems of the liver.

1/1

2/2 006

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135020

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PREPN. OF  
2,2PRIME,METHYLENEBIS(CYCLOHEXANONE) BY THE ALK. CONDENSATION OF HCHO  
WITH CYCLOHEXANONE, 2,(1,HYDROXYCYCLOHEXYL) CYCLOHEXANONE AND 2,(DELTA  
PRIME1,CYCLOHEXENYL)CYCLOHEXANONE (CONTG. CYCLOHEXYLIDENE TAUTOMER) ARE  
ALSO FORMED. FACILITY: DAL'NEVOST. GOS. UNIV., VLADIVOSTOK,  
USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--CONDENSATION OF ALDEHYDES AND KETONES. XX. PREPARATION OF  
METHYLENEBIS,CYCLOHEXANONE, BY THE ALKALINE CONDENSATION OF  
AUTHOR-(02)-TILICHENKO, M.N., AKIMOVA, T.I. — A  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 976-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CYCLOHEXANONE, CONDENSATION REACTION, FORMALDEHYDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1346 STEP NO--UR/0366/70/006/005/0976/0979  
CIRC ACCESSION NO--AP0135020  
UNCLASSIFIED

USSR

SAKHAROV, YE. S., et al., Atomnaya Energiya, Vol 29, No 1,  
Jul 70, pp 43-45

It is concluded that the experience in operating the radiation loop confirms the reliability and simplicity of servicing such devices. The capacity of the loop should be increased in the future by increasing the number of layers in the generator and also by using a more efficient  $\gamma$ -carrier -- pure indium.

4/4

USSR

SAKHAROV, YE. S., et al., Atomnaya Energiya, Vol 29, No 1,  
Jul 70, pp 43-45

the neutron flux in adjacent layers of moderating material.

The participation of neutrons of all energies in activation was confirmed by an experiment in which the adjacent row of fuel assemblies was replaced by graphite and the activity generator was shifted away from the core. As a result, the activity of the loop dropped by 10 percent. The graph of the experimental results also shows that the decrease in the reactivity margin of the reactor even with the generator at the closest point to the core does not exceed 0.25 percent, and in the presence of graphite fuel elements it is still less (0.17 percent). These data do not differ in practice from those obtained on other devices. Application of a movable irradiator permitted significant expansion of the experimental possibilities of the loop since it permitted entrance into the operating chamber almost immediately after shutting down the loop even if the alloy residues had not been blown out. In addition, the presence of the irradiator permitted not only feeding samples to the source but also the source to the samples.

3/4

USSR

SAKHAROV, YE. S., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 43-45

activity generator layers. However, the dependence of the irradiator power on the position of the activity generator with respect to the core has a monotonic nature. A difference between single-layer and multiple-layer generators is noted. In the position of the single-layer activity generator with respect to the core there is a clear optimum coinciding with the bump zone of the thermal neutron flux in the reflector. For the multiple layer generator the power of the irradiator increases monotonically on approaching the core. The nature of the increase in the power curve coincides with the spatial distribution of the total neutron flux in the reactor. This means that not only thermal neutrons, but also more rigid neutrons which decelerate in the interstitial layer of water between the  $\gamma$ -carrier layers, participate in activation. Thus, more complete utilization of neutrons leaking out of the core is achieved in the multiple layer generators. In addition, more complete participation of the  $\gamma$ -carrier nuclei in absorption of neutrons is also achieved as a result of a partial decrease in self-shielding as a result of thinning-down of the layers and decreasing the depression of

2/4

Nuclear Sciences and Technology

UDC 621.039.573

USSR

SAKHAROV, YE. S., CHUCHALIN, I. P., SKORIKOV, A. G., AKIMOVA,  
R. I., and KARNAUKHOV, V. V.

"Radiation Loop of the IRT Reactor at Tomsk Polytechnical  
Institute"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 43-45

Abstract: A description is given of the characteristic features and technical specifications of the radiation loop of the IRT reactor at Tomsk Polytechnical Institute and the results of efforts made to optimize its operating conditions as a function of the position of the activity generator layers with respect to each other and the generator as a whole with respect to the core. The effect of the loop on the criticality of the reactor is also estimated.

It has been established that increasing the gamma-carrier flow rate above 4 cm<sup>3</sup>/sec does not increase the power of the irradiator since the parameters  $\tau$ ,  $\nu$ , and  $\epsilon$  decrease sharply. Graphs are presented showing the results of experiments in optimizing the operating conditions of the loop. From the figure it is obvious that there is an optimum distance between the

1/ 4

USSR

UDC 628.3+669.295

AKIMOVA, N. A., KARVATSKAYA, R. A., USACHEVA, L. A., and KOVALEV, V. Ya.

"Semiindustrial Experiments on Removing Suspended Substances and Oils From  
Runoff Waters"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya  
Publishing House, Vol 6, 1970, pp 143-145

Translation: A description is given of the results of industrial tests on purifying runoff at the DTM [expansion unknown] Plant of suspended substances and oils by mixing neutralized and slightly polluted runoff in a ratio 1:2.5 or 1:2, introducing polyacrylamide in the amount of 0.1-0.2% of the suspended substances, and subsequent standing for one hour. It is demonstrated that under such settling pool operating conditions, a clear, colorless, purified 75% (volumetric) amount is received, which contains an average of 10.4% mg/liter of suspended substances, and no oil. In the settled deposit, the content of the hard part averages 2% and water 98%. After five hours of settling in a separate reservoir, consolidation of the deposit practically ends and the content of the hard part averages 3.6%. One illustration and two tables.



Magnesium

USSR

UDC 669.295.004.2

AKIMOVA, N. A., KARVATSKAYA, R. A., USACHEVA, L. A., and PAVLYUK, YU. S.

"Desalinization of Waste Water in Titanium-Magnesium Production"

Sb. tr. Vses. n.-i. i provektn. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, B, pp 109-113 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G156)

Translation: Investigations are conducted of the desalinization of waste water from a gas purification installation in Mg production (hypochlorite pulp). A principal diagram for the neutralization and desalinization of waste water is proposed: filtration, breaking down of  $\text{Ca}(\text{OCl})_2$  in HCl filtrate, thereafter of phenol water, vacuum evaporation, evaporation in steel boats. As a result, a melted  $\text{CaCl}_2$  is obtained which corresponds to GOST 450-58. 2 ill., 4 tables.

Authors' abstract

USSR

UDC 669.295.053.24

PAVLYUK, YU. S., KARVATSKAYA, R. A., AKIMOVA, N. A., and SYCH, M. P.

"Study of the Properties of Powder of Ore-Thermal Furnaces"

Sb. tr. Vses. n.-i. i proyekt. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 105-109 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G155)

Translation: Results are described of an investigation of the fineness and chemical composition of powder carried away from the ore-thermal furnaces of a titanium-magnesium plant. When briquettes are used in the operation of ore-thermal furnaces the powder consists of particles which are considerably finer than those obtained when a concentrate is used. The chemical analysis of the powder shows a composition analogous to that of the charge material. 3 ill., 3 tables. Authors' abstract.

USSR

AKIMOVA, N. A., et al, Tsvetnyye metally, No 3, Mar 72, pp 46-48

will practically eliminate both the drainage of waste water into the water reservoir and the disposal of salts within the city limits.  
(1 illustration, 1 table, 4 bibliographic references).

2/2

- 48 -

USSR

UDC: 669.295:628.3

AKIMOVA, N. A., KARVATSKAYA, R. A. and KOSTROMINA, L. A.

"Flow Chart for Recycling the Water Supply at Titanium and Magnesium Plants"

Moscow, Tsvetnyye metally, No 3, Mar 72, pp 46-48

Abstract: Presented are the results of a series of research projects co-sponsored by the Titanium Institute with other titanium and magnesium combines on designing a water recycle flow chart for these combines. The new flow chart includes neutralization and demineralization of titanium and magnesium sewage for the purpose of making the water suitable for processing. The magnesium gas purifier drainage is decontaminated from hypochlorites with hydrochloric acid and phenolic water, while the spent solution is demineralized by distillation to produce commercial calcium chloride meeting GOST 450-58 specifications. All other neutralized and low-contamination drainages are combined at 1:2 ratios, treated with polyacrylamide (to remove oils) and demineralized by electrodialysis. The desalted water has a residual salt content of 0.5-1.0 g/l. The new system

APO 021244- CHEMICAL ABST. 2-70 URO189

A

21255p Synthesis of  $\alpha$ -oxoisocaproic acid. Akimova, L. N. (USSR). *Vestn. Mosk. Univ., Khim.* 1969, 24(2), 124-8 (Russ). Reaction of  $\text{Me}_2\text{CHCH}_2\text{MgBr}$  with  $(\text{CO}_2\text{R})_2$  in the presence of an equimolar amt. of  $\text{H}_2\text{O}$  gave  $\text{Me}_2\text{CHCH}_2\text{COCO}_2\text{R}$  (I). Hydrolysis of I gave the title compd. (II). Thus, a Grignard reagent prepd. from 12.2 g Mg, 68.5 g  $\text{Me}_2\text{CHCH}_2\text{Br}$ , and 100 ml  $\text{Et}_2\text{O}$  was added to a mixt. of 58.4 g  $(\text{CO}_2\text{Et})_2$ , 7.2 ml  $\text{H}_2\text{O}$ , and 175 ml  $\text{Et}_2\text{O}$  at  $-10^\circ$  to give 26.7 g I (R = Et), b<sub>70-2^\circ</sub>, d<sub>20</sub> 0.9889, n<sub>D</sub><sup>20</sup> 1.4200; 2,4-dinitrophenylhydrazone (DNPH) m. 126-7° (EtOH). Similarly prepd. was 44% I (R = Bu), b<sub>10</sub> 102-4°, d<sub>20</sub> 0.9486, n<sub>D</sub><sup>20</sup> 1.4232; DNPH m. 88-8.5° (EtOH). Treating I (R = Et) with 5% KOH gave 90% II, b<sub>10</sub> 82-5°, d<sub>20</sub> 1.0312, n<sub>D</sub><sup>20</sup> 1.4260; dicyclohexylammonium salt m. 168° ( $\text{Me}_3\text{CO}$ ). Treating II with NaOH at pH 6.8 gave II Na salt.

Jaroslav Jonas

19621248

AF0017812 CHEMICAL ABST. 70

240366

12014g Preparation of  $\alpha$ -oxo acid esters from the action of a Grignard reagent on oxalic acid esters. Akimova, L. N. Bel'di, E. S. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Zh. Org. Khim.* 1969, 5(9), 1569-71 (Russ). The reaction of  $(\text{CO}_2\text{R})_2$  (R is Et or Bu) with  $\text{R}'\text{MgBr}$  ( $\text{R}'$  is  $\text{MeCH}_2\text{CHMe}$ ,  $\text{Me}_2\text{CHCH}_2\text{CH}_2$ , or iso-Bu) in abs. ether contg. 2 equivs.  $\text{H}_2\text{O}$  gave  $\leq 65\%$   $\text{R}'\text{COCO}_2\text{R}$  (R and  $\text{R}'$  given): Et, iso-Bu; Et,  $\text{MeCH}_2\text{CHMe}$ ; Et,  $\text{Me}_2\text{CHCH}_2\text{CH}_2$ ; Bu,  $\text{Me}_2\text{CHCH}_2$ . The sapon. of the esters gave the corresponding acids, which were converted to dicyclohexylammonium salts; 2,4-dinitrophenylhydrazone derivs. and semicarbazones of the esters were also prepd.

CPJR -

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USSR

UDC 681.3.06.51

AKIMOVA, I. N.

"Approximation of a Function by Pieces of a Second Order Surface"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No. 194, 1970, pp 127-135 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V654 by V. Mikheyev).

Translation: A method is studied of approximating a smooth function of two and more variables by composing it of pieces of second order surfaces for the case of tabular determination of the function. With analytic determination of the function, its piecewise-surface approximation is performed by a logical method based on determination of the analytic characteristics of the extreme points. Logic formulas are produced allowing the possibility of decreasing the error in approximation or decreasing the number of pieces of the surface with fixed methodological error was produced, allowing simplification of the devices realizing the method. Ten biblio refs.

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AKIMOVA, A. YU., et al., Povsh. konstruktivn. prochnosti stalev i splavov.  
No 2, Moscow, 1970, pp 177-180

-70°, 2 hours, and aging at 450°, 4 hours;  $\sigma_{0.002}$  of the same steel is 110-115 kg/mm<sup>2</sup> after ordinary quenching, cold working, and aging. A sharp increase in  $\sigma_{0.002}$  was observed for martensitic aging steel immediately after high-temperature thermomechanical working (25% reduction at 1,050°). However, the increase in  $\sigma_{0.002}$  after aging steel subjected to high-temperature thermomechanical treatment does not exceed 4-6 kg/mm<sup>2</sup>. There are 2 illustrations and a 2-entry bibliography.

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USSR

UDC 669.15.018.44

AKIMOVA, A. YU., RAKHSHTADT, A. G., ARZAMASOVA, V. S.

"High-Temperature Thermomechanical Working of Stainless Dispersion-Hardening Steels"

Povysh. konstruktivn. prochnosti staley i splavov. No 2 -- V sb. (Improving the Structural Strength of Steels and Alloys. No 2 -- collection of works), Moscow, 1970, pp 177-180 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I652)

Translation: The effect of high-temperature thermomechanical working and subsequent aging on  $\sigma_{0.002}$  of stainless dispersion-hardening Cr-Ni steel of austenitic-martensitic class type 17-7 additionally alloyed with Al, Mo, or Ti and stainless martensitic-aging 12 Cr-10 Co steel with a high W content (6-8%) or Mo content (6%) was studied. High-temperature thermomechanical working of Cr-Ni steel not only increases  $\sigma_{0.002}$  but also the resistance to stress relief during prolonged aging. The highest  $\sigma_{0.002}$  was obtained in Kh17N7T steel (0.3% Ti). The value of  $\sigma_{0.002}$  is 150 kg/mm<sup>2</sup> after high-temperature thermomechanical working (reduction of area 50%), cold working at 1/2

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AKIMOVA, A. A., KARPOV, I. K. and KASHIK, S. A., Mat. Modeli v Geol. i Geostatistika, Moscow, Nauka Press, 1973, pp 40-44

the basis of the results of independent observations

$$x_1^0, x_2^0, \dots, x_N^0 \quad (1)$$

of geological objects belong to classes  $v_1, v_2, \dots, v_a$ . The results of observations are  $p$ -dimensional vectors and are ordered in sequence (1) so that the results of observations of the geological objects belonging to class  $v_i$  precede the results of observations of geological objects belonging to class  $v_{i+1}$ .

Suppose  $n_i$  the number of observations of geological objects belonging to class  $v_i$ . Classes  $v_1, v_2, \dots, v_a$  can be assigned the weights  $y_1, y_2, \dots, y_a$  respectively.

Coefficients  $\theta_0, \theta_1, \dots, \theta_p$  and weights  $y_1, y_2, \dots, y_a$  are selected so as to minimize the function

$$\sum_{m=1}^a \sum_{l=s(m)+1}^{s(m)+n_m} \left[ \theta_0 + \sum_{j=1}^p \theta_j X_{ij}^n - y_m \right]^2.$$

where  $s(m) = \sum_{l < m} n_l$ .

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AKIMOVA, A. A., KARPOV, I. K. and KASHIK, S. A.

"Recognition of Geological Objects Belonging to Several Classes on the Basis of a Single Function"

Mat. Modeli v Geol. i Geostatistika [Mathematical Models in Geology and Geostatics -- Collection of Works], Moscow, Nauka Press, 1973, pp 40-44 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V193)

Translation: A group of  $\alpha$  a priori possible classes of geological objects  $v_1, v_2, \dots, v_\alpha$ , are studied, characterized by  $p$  properties (for example, the content of chemical compounds, expressed in weight percent). Suppose of a certain set we extract the sample  $X_1, X_2, \dots, X_k$ , where  $X_i = (X_{i1}, X_{i2}, \dots, X_{ip})$  is a  $p$ -dimensional vector. In order to classify the set in question (that is related to one of the classes  $v_1, v_2, \dots, v_\alpha$ ), it is suggested that we use the statistics

$$f = \theta_0 + \theta_1 \bar{X}_1 + \theta_2 \bar{X}_2 + \dots + \theta_p \bar{X}_p,$$

where  $\bar{X}_l = \frac{1}{k} \sum_{i=1}^k X_{il}$ . The coefficients  $\theta_0, \theta_1, \dots, \theta_p$  are selected on

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AKIMOV, Yu. S. et al., Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1917-1926

ceding the diffusion section is observed on the Rashba-Tolpygo-Ismert-Band current-voltage curve for long diodes ( $W/L_p > 2$ ), and a detailed study is made of this section. Six figures, one table, bibliography of 36 titles.

USSR

UDC 621.382.6.001.5

AKIMOV, Yu. S., GUSEV, V. M., KUMELOV, V. I., PETEROV, I. V.

"An Investigation of the Injection Characteristics of Symmetric PIN Diodes Made by the Method of Ion Implantation"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1917-1926

Abstract: The paper presents a review of the principal drift and diffusion theories of double injection as applied to symmetric PIN structures. The width of the I-region varied over a range of  $W/l_p = 0.3-15$ . Precise knowledge of the parameters of the separate regions of  $P^+N^+$  structures made by ionic doping of high-resistance P-silicon enabled the authors to make a detailed quantitative and qualitative comparison between the experimental characteristics and those predicted by the drift theory and chiefly by the diffusion theory of double injection. It is shown that the Hall diffusion model is inadequate for analyzing the data on PIN structures, and a detailed study is made of the Kleinman section of the current-voltage curve. Experimental data are compared with the theory with regard to nonequilibrium impurity distribution in the heavily doped layers. A drift section is -

1/2

2/2 006

UNCLASSIFIED

PROCESSING DATE--30CCT70

CIRC ACCESSION NO--AP0125653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX COMPS. OF METALS WITH ANTIPYRINE AND ITS DERIVS. OF THE M(R) SUBN X SUGM AND (R.H) SUBN-M (ME PRIME X SUBN)TYPE, WHERE R IS THE LIGAND AND X IS EITHER CL PRIME NEGATIVE, BR PRIME NEGATIVE, I PRIME NEGATIVE, SCN PRIME NEGATIVE, BEHAVE BOTH AS ACID AND BASE IN NONAQ. MEDIA. THEIR ACID PROPERTIES DEPEND ON THE COMPLEX FORMING METAL AND THEIR BASIC PROPERTIES ON THE NATURE OF THE LIGAND. COMPLEX COMPS. OF ZN, CD, HG, CO, AND MN WITH 1-2 MOLS. OF THE LIGAND IN M SUB2 CO BEHAVE AS BASES. COMPS. OF THE M(R) SUBN X SUBM TYPE ARE AMPHOLYTES. COMPLEX COMPS. OF BI, PT, OS, ZN, AND SB WITH ANTIPYRINE AND IS DERIVS. OF THE 2ND TYPE BEHAVE AS ACIDS IN ME SUB2 CO. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ACID BASE PROPERTIES OF COMPLEXES OF METALS WITH ANTIPYRINE AND ITS  
DERIVATIVES IN NONAQUEOUS MEDIA -U-  
AUTHOR--(03)--AKIMOV, Y.K., BUSEV, A.I., YEMEL'YANOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 40-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL COMPLEX COMPOUND, HETERO CYCLIC NITROGEN COMPOUND, ACID  
BASE COMPLEX, CADMIUM COMPLEX, BISMUTH COMPOUND, PLATINUM COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054745

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE PROBLEM OF THE DETERMINATION OF TIME FLUCTUATIONS IN SCINTILLATION COUNTERS HAS BEEN CONSIDERED WITH AN ARBITRARY TOTAL MEAN NUMBER OF PHOTOELECTRONS  $\bar{R}$  SUBO DURING A SCINTILLATION FLASH. THE FLUCTUATIONS OF  $\bar{R}$  HAVE BEEN TAKEN INTO CONSIDERATION. THE RESULTS OF CALCULATIONS FOR THE LEADING EDGE METHOD ARE GIVEN WHICH SHOW THE EFFECT OF VARIOUS FACTORS AND PARAMETERS OF A SCINTILLATION COUNTER UPON ITS RESOLVING TIME. (AUTH).  
FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA, USSR.

UNCLASSIFIED



1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--ON THE THEORY OF THE RESOLVING TIME OF SCINTILLATION COUNTERS -U-  
AUTHOR-(02)-AKIMOV, YU.K., MEDVED, S.V. A  
COUNTRY OF INFO--USSR  
SOURCE--NUCL. INSTRUM. METHODS; 78: 151-3(1970)  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--SCINTILLATION COUNTER, TIME CONSTANT, PHOTO ELECTRON, CURRENT  
DENSITY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
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CIRC ACCESSION NO--AP0054745  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0111646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF THE DETERMINATION OF TIME FLUCTUATIONS IN SCINTILLATION COUNTERS HAS BEEN CONSIDERED WITH AN ARBITRARY TOTAL MEAN NUMBER OF PHOTOELECTRONS  $R$  SUBO DURING A SCINTILLATION FLASH. THE FLUCTUATIONS OF  $R$  HAVE BEEN TAKEN INTO CONSIDERATION. THE RESULTS OF CALCULATIONS FOR THE LEADING EDGE METHOD ARE GIVEN WHICH SHOW THE EFFECT OF VARIOUS FACTORS AND PARAMETERS OF A SCINTILLATION COUNTER UPON ITS RESOLVING TIME. FACILITY: JOINT INST. NUCLEAR RES., DUBNA, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ON THE THEORY OF THE RESOLVING TIME OF SCINTILLATION COUNTERS -U-  
AUTHOR-(02)-AKIMOV, YU.K., MEDVED, S.V.  
COUNTRY OF INFO--USSR  
SOURCE--NUCLEAR INSTRUM. METHODS (NETHERLANDS), VOL. 78, NO. 7, P. 151-3,  
1 FEB. 1970  
DATE PUBLISHED--01FEB70  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--SCINTILLATION COUNTER, TIME CONSTANT, PHOTOELECTRON, ELECTRON  
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DOCUMENT CLASS--UNCLASSIFIED  
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